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Forestry Innovations to serve  
Canadians and the World

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# Forestry

## Innovations to Serve Canadians and the World



Natural Resources  
Canada

Ressources naturelles  
Canada

Canada

## Canada's forests



Canada's vast forests play a tremendous role in the economy, culture and environmental well-being of Canada. As one of the country's most valuable resources, they are carefully managed, not just for today, but for future generations – in a way that balances the needs of people, communities and industry. And that management keeps changing to keep pace with changing forest values, new technology and new methods to improve sustainability.

The 417-million-hectare forests that cover half of Canada represent 10 per cent of the world's temperate and boreal forests. These forests are a rich mix of 180 species spread over eight forest regions, four-and-a-half time zones and 15 major ecosystem zones. Given that huge forest endowment, Canadians manage their forests for a wide variety of values including biodiversity, wildlife habitat, recreation, conservation, and fibre production.

The large majority of Canada's forests are publicly owned (94%), and the remaining 6% are the private property of more than



425,000 landowners. In Canada, ten provinces and three territories have responsibility for the legislation and regulation of forest management.

Forests are vital to the economy. The manufacture of forest products supports one out of every 16 jobs (representing almost one million direct and indirect jobs) and is the lifeblood of more than 300 communities. The 230-million hectares of commercial forests of Canada, only half of them currently in production, not only supply the raw material producers need, they also protect biodiversity, conserve soil and water resources and provide the setting for a multi-billion dollar tourism industry.

Why are Canadian forest products so sought after throughout the world? The answer is quality. Canadian forests contain some of the finest softwoods and hardwoods in the world. That, along with a highly skilled workforce using advanced technology, gives our forest products a significant competitive advantage. It also helps that Canada has ready access to the international marketplace.

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It's a marketplace with an appetite. In 1997, for example, Canada shipped \$69.5 billion worth of forest products, most of it to other countries that purchase our high-quality primary products: pulp, newsprint, softwood lumber and wood-based panel products. Those shipments also include high-growth sales of Canada's other value-added products: paper packaging, stationery and business papers, wood windows, doors, mouldings and furniture and construction materials.

Interestingly, the annual production of those exports, and all other Canadian forest products, only requires a harvest of less than one quarter of one per cent of the country's forests. That's made possible because of a commitment to sustainability, use of improved technology and efficient production.



Canada takes that commitment seriously. Sustainable development is the basis of federal and provincial forest policies, laws and regulations. Those policies ensure company activities are closely regulated, scrutinized and audited. And Canadian forest products companies help champion that approach. Every year, they collect and communicate more and more information about their forest practices and the use of certification systems. More than 75 per cent of Canada's managed forest land is expected to be certified by the end of 2003.

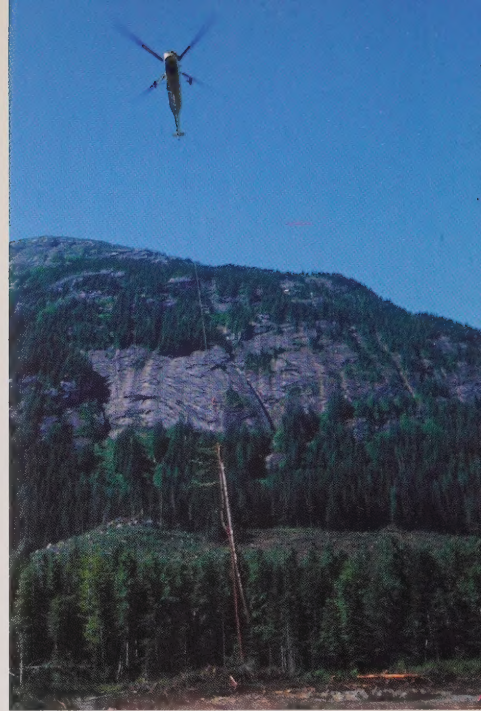
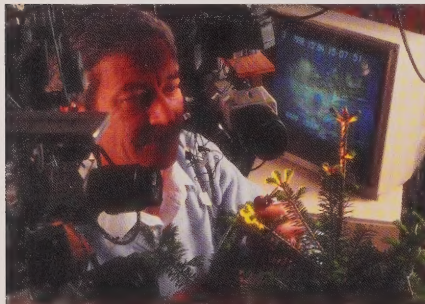
Working together, the Canadian federal and provincial governments have set aside the largest area of protected forest in the world, more than 32 million hectares as of 1995. That area alone is roughly the size of Norway. Since 1995, of course, most provinces have increased their protected forest and set aside additional forested land as part of a program to preserve ecosystem-representative areas across Canada. In fact, in 2000, British Columbia became the first jurisdiction in North America to meet the United Nations' goal of protecting twelve per cent of its land base.



## Technology

The Canadian forest sector in 200 years has evolved into a world-class, technologically advanced industry. That's partly the result of collaboration between government, the forest sector and this trio of Canadian technology organizations: the Pulp and Paper Research Institute, the Forest Engineering and Research Institute and Forintek Canada.

These institutes work collaboratively with industry and government to address technology, product innovation and environmental issues. That working relationship has resulted in some world-class innovations, for example, improvements in paper recycling. A closed loop technology with minimal effluent has dramatically boosted the efficiency of pulp and paper production and its impact on the environment. The industry-government link has spawned other innovations, such as parallel strand lumber. PSL, a high-strength structural composite lumber product, makes use of smaller growth timber in the manufacture of large dimension material that is resistant to shrinking, warping, cupping, bowing or splitting.



On their own, Canada's forest product companies have invested heavily in new technologies and new processes, such as oriented strand board mills. They produce high-quality products at competitive prices while minimizing environmental impacts at every stage of the manufacturing process.

Canada is also home to some of the world's leading forest research scientists, the originators of everything from alternative harvest methods to protect biodiversity to biologically safe alternatives to chemical pesticides. And no one is more advanced in forest fire management. The Canadian Forest Service, for example, developed the Spatial Fire Management System which rates fire start potential and predicts occurrences and the behaviour of new wildfires. It's in use now in Canada, parts of the U.S.A., Mexico, Indonesia, Malaysia, Brunei, Thailand, Vietnam, and the Philippines and under study in China, Russia and the Baltic countries.

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## Wood and Building Products

Canada wood and building products can be found in every corner of the world. The wood industry, which produces lumber, panelling and other value-added products, exports more than 70 per cent of its goods. Meanwhile, Canada's building products companies provide the world with more than 400 different manufactured products – everything from door frames to finished homes – an export package worth \$20 billion annually.

Canadian innovative ability has also magnified the growth in the production of value-added wood products – a 600 per cent increase in just 10 years – and growing every year. Prefabricated housing units, engineered wood products, windows and doors ... even Canadian-made kitchen cabinets have a global reputation for quality, design, and finish.

For investors, Canada offers outstanding opportunities. Exports of wood and building materials are expected to keep growing. In addition, the North American Free Trade Agreement (NAFTA) gives tariff-free access to a US\$600-billion construction and building products market.

Canadian innovation also plays a role in providing shelter in a world whose population is rapidly increasing. Canada is a world leader in providing ready-made housing. Canadian pre-fabricated housing systems can be transported easily and constructed quickly. When ordered as complete packages, all new owners have to do is turn the key, an innovation Canada is renowned for in countries such as China and Germany. And it's exceptional housing. Canadian platform frame construction is flexible, durable, and adaptable and suited to the domestic, as well as the export market. In fact, in Japan the wood-frame system is valued for being earthquake-resistant.

Canadian wood and building products manufacturers also helped pioneer the use of wood products that aren't really wood – solid wood, that is. For example, the sawdust and chips that were wasted yesterday are now used to make innovative fibreboard.

But Canadians have carried environmentally conscious construction even further. Canada's ATHENA™ Sustainable Materials Institute uses an advanced computer model to help building designers and researchers assess what the environmental impact would be if they chose one building material over another – over the life of a building. The organization's case studies, by the way, indicate wood is one building material that offers many environmental benefits.



## Pulp and Paper

In more than 85 countries, people read newspapers printed on Canadian newsprint. That appetite for Canadian pulp and paper – from raw pulp used to make paper and high quality writing paper to the other paper products, such as cardboard and fine tissues and strong adhesive – keeps growing. Pulp and paper is Canada's largest net export. Eighty per cent of what the mills produce is exported. Fifty per cent of the shipments go to the United States; another 30 per cent go to other countries.

Because it's portable, recyclable, economical and versatile, paper is valuable and the world demand for it has doubled in the past 20 years and will double again by 2010, say experts.

To meet that need, Canadian producers are trying to find ways to get more from the same amount of fibre, to develop faster growing trees and find new fibre sources. They're also stepping up production of lighter weight newsprint that provides more printing surface per tonne than ordinary newsprint.

Canadian pulp and paper manufacturers are committed to sustainable development, and to processes that support that approach. That's why they are committed to increasing production of high quality, recycled content paper. Despite a relatively small population spread over a huge area, Canada has a paper recovery rate of almost 50 per cent, which rivals the U.S. record and compares favourably to the more densely populated countries of Europe. Canadian manufacturers are just as tenacious in their continual quest for the cleanest and least expensive way to make the pulp and paper products used around the world. Since 1990, the pulp and paper industry has invested over \$5 billion in technologies to limit emissions.



# FORESTRY



The Canadian forestry sector has evolved into a world-class, technologically advanced industry, and a leader in sustainable forest management, and will continue to evolve. Canada will continue to invest in its forests and the forest industry, protecting its environment, involving its people and valuing its diversity. Canada's abundance of natural resources, cutting-edge technology, and highly-skilled workforce make it one of the best places in the world to do business.

For more information:  
**[www.nrcan.gc.ca/cfs](http://www.nrcan.gc.ca/cfs)**

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Catalogue Number: M22-137/2001-4E

ISBN: 0-662-30033-5



